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By-Cohen, S. Alan, Reinstein, Steven

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A program developed at Yeshiva University to emphasize self-directing, self-correcting techniques for teaching basic reading skills to socially disadvantaged junior high school students is discussed. Seven laws of learning which underlie the guidelines for the program are presented. The following four guidelines to effective methodology are listed: (1) high intensity learning, (2) individualized content, (3) individualized progress, and (4) individualized material level. The teacher's role is examined and observed to include facilitating student-directed activities by arranging conditions conducive to learning, matching materials to individual needs, interacting with the students, and evaluating student progress. A specific program description indicates that all students are pretested on the Cohen-Cloward Diagnostic Test of Word Attack Skills and the California Reading Test which yield diagnostic patterns for each child and that classes of 20 to 30 students rotate among the three learning centers: Comprehension, Word-Study Skills, and Word Analysis-Vocabulary Centers. The activities of each center are briefly described. (RT)

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SKILLS CENTERS: A SYSTEMS APPROACH TO READING INSTRUCTION

By S. Alan Cohen & Steven Reinstein
READING AND LANGUAGE ART CENTER
FERKAUF GRADUATE SCHOOL, YESHIVA UNIVERSITY

This paper describes a systems approach to reading improvement developed at the Reading and Language Arts Center at Ferkauf Graduate School of Yeshiva University. The system was designed to be used in schools for urban disadvantaged children grades 4-12. Applications of the system over the past five years with middle class, on-grade achievers indicates that,as expected, they achieve significant gains also.

HISTORY OF THE METHOD

In 1962, the skills stations, self-directing, self-correcting technique for teaching basic reading skills, was piloted at Lyman School for Boys, a reform school for disadvantaged adolescent delinquents by Dr. Mabel Noall and Dr. S. Alan Cohen of Boston University. It was successful.

In the summer of 1963, it was demonstrated in the professional reading courses at Boston University. Again it proved successful. From 1963 to 1965, the techniques were tested in a number of settings at Mobilization for Youth on New York's Lower East Side. Reports of results are available from the Education Division of Mobilization for Youth. During these demonstrations, techniques and materials were refined. Finally, during the summer of 1964 the methods were fully tested at P.S. 140 at Mobilization for Youth's Demonstration Experimental Reading School. This was replicated again in 1965 under grants from the Office of Economic Opportunity to the Two Bridges Project, a joint community and school organization on New York's Lower East Side. This program was planned and staffed by participants in the previous Mobilization for Youth's program and was patterned after the summer experiment of 1964. Again, post testing showed statistically significant gains in disadvantaged retarded school achievers.

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The most thorough demonstration of the technique was conducted in a junior high school for socially disadvantaged children under a Ford Foundation grant in 1964 and 1965. A full report of this program will be included in the text, Teach Them All to Read (S. Alan Cohen, author to be published by Random House, 1969). Recently, the methods were tried with good results, in the lower grades by Steven Reinstein and Jerry Skapof in grades one and two. Presently, Reinstein has begun a 4-year project in the Bronx substituting skills-centers for I.P.I.

Laws of Learning Underlying the Guidelines and the Program

The guidelines used for building the experimental curriculum for socially disadvantaged junior high school children were based on seven valid laws of learning. A concise list of these laws of learning can be found in Hilgard's classic work, Theories of Learning (New York): Appleton-Century-Crofts, 1956, pp. 486-487). A discussion of each law is presented here:

1. WHEN to teach WHAT depends upon the individual's CAPACITY
   For decades, American schools have pre-determined the content of curriculum and the timetable and rate for teaching that content. Those who could not meet the timetable and rate, and those who could not accept the content for various reasons were disposed of via the insidious method called "drop out." Now with a focus on the "disadvantaged", schools can no longer defend this method.

   Evidence is now accumulated to show that capacity is largely a learned "perceptual set" influenced primarily by early environmental opportunity in the form of incidental and formal learning (McV. Hunt, Intelligence and Experience. Ronald Press, 1961). The guidelines for the experimental curriculum do not accept the content as given but suggest that content be adjusted to individual need. The author would be hard put to defend any content as being absolutely necessary to the education of disadvantaged children with three exceptions: reading, writing, and arithmetic. The experimental curriculum implies that all children have to learn to read to be free in modern society.

   The guidelines to this curriculum recognize that the WHEN must vary from individual to individual--hence, the individualized, high intensity learning program is proposed.

2. A motivated learner acquires what he learns more readily than one who is not motivated.

In the guidelines motivation is handled according to valid laws of learning:

a. Motivation that is too intense (pain, fear, or extreme anxiety) may introduce to learning distracting emotional states. Every youngster has strengths or weaknesses. In an individualized self-directing program each youngster moves at his own pace in a direction dictated by his own diagnosed strengths and weaknesses. In such a program a youngster recognizes that two other classmates working on another skill, in another part of the room, do not have the same weaknesses. Their problems are different. Individual differences are obvious not only to the teacher, but to the pupils as well. Instead of punishing a youngster for his weaknesses, the self-directing program rewards him for helping discover his own weakness and for remediating that weakness. Ego defense is unnecessary. Finally, the system provides a floating teacher who can boost the ego of the threatened child and control the level of motivation.

b. Learning under intrinsic motivation is preferable to learning under extrinsic motivation. The entire program is built on achievement success rewards. Not grades or candy, but successful achievement of a skill is the basic motivation. Research indicates that achievement success feeds on itself and drives the subject to further achievement. Every normal youngster wants to succeed.

c. Success or positive reward is preferable to negative reward, failure, or punishment. Research shows that target behaviors in the lab tend to be learned equally as well with positive or negative reinforcers. However, most learning specialists agree that side effects or "social by-products" (non-target behaviors)are more favorable when learning is reinforced positively. In the experimental program, failure or lack of success is a temporary state. The goal is success: the methodology offers each individual the chance to succeed.

d. Tolerance for failure is best taught through providing a backlog of success that compensates for experienced failure. By focusing on strengths and weaknesses and on specific operations, the experimental program matches materials to strengths to insure success, and to weaknesses to insure growth. Learning goals are defined operationally in very specific subskills. Individuals move step by step through a complex pattern with high incidence of success. Success is built in, so that it compensates for occasional failure. When it does not, the program provides a floating teacher comes

to the aid of the individual, because all of his time is not monopolized by the whole class.

3. Individuals need practice in setting goals for themselves, goals neither so low as to elicit little effort nor so high as to foreordain to failure. Realistic goal-setting leads to more satisfactory improvement than unrealistic goal-setting. In the program, instruction is largely self-directing. The individual pupil is making decisions. He constantly checks and paces himself. His teacher is a consultant who offers suggestions for goals and for means.
4. Active participation by a learner is preferable to passive reception.
The program's primary feature is high intensity learning. Frequency of response is high because instruction is individualized. The program incorporates this feature of a tutorial system while preserving the advantages of a group experience by using self-teaching materials that could be used either individually or in learning teams. The student does the teaching in conjunction with materials, classmates, and a supervising teacher.
5. Meaningful tasks are learned more efficiently than tasks not understood by the learner.
In the experimental program this learning principle is fulfilled through a sixth principle.
6. Information about the nature of a good performance, knowledge of successful results aid learning.
Many educators insist that all materials should relate directly to the student's needs or interests. So, for example they argue that basal reader content is relatively meaningless to culturally deprived youngsters who cannot relate to the middle class content. This is an excellent guiding principle. The materials and tasks of the model program should conform to the student's needs or interests.

However, there are other types of meaning. This is implied in research which indicates, for example, that basal readers are as effective as "high interest" literature in teaching reading. Knowledge of one's strengths and weaknesses, knowledge of the nature and reason for a task, knowledge of goals, knowledge of results of drill exercises, and the chance to succeed, give these tasks and materials tremendous meaning for individuals who want to succeed.

A good learning program uses both types of meaning to promote learning.

7. The personal history of the individual, for example, his reaction to authority, may hamper or enhance his ability to learn from a given teacher.

The day may come when teachers and administrators are psychologically secure enough to recognize individual differences of temperment and perception and are willing to transfer youngsters in order to best match teacher-student personalities. Meanwhile, a teaching program that allows both maximum and minimum contact between teacher and student will help us adjust to this problem. Under the experimental program, a youngster who can not relate to his teacher (or vice versa) benefits from the self-teaching program and from close personal interaction with classmates in learning teams.

The Skills Centers Program presents a practical approach to educating underachieving disadvantaged youth. It is designed, therefore, for schools plagued by rigid class schedules, restricted physical plants, large teacher-pupil ratios and low staff morale. The program structures an environment conducive to learning in underachievers burdened by serious psycho-social pressures, with histories of school failure and delinquency. Such an environment sets learning as its first priority where learning is defined operationally as an active rather than passive function.

Rather than dissipate educational energy across the huge spectrum of needs, the program selects that area most basic to the child's educational and economic future: reading and literacy skills.

Both the structuring of the learning environment and the zeroing in on reading skills are based on four guidelines to effective methodology, seven valid laws of learning, and seven principles of psycho-social development.

Four Guidelines to Effective Methodology

1. High Intensity Learning - Pupils work individually or in small learning teams on self-directing materials that present a series of programed stimuli to which each individual responds. Learning is active and continuous. The individual does not have to wait his turn to "recite". He is always"reciting;" He is always responding.
2. Individualized Content - Based on diagnostic testing, children are assigned materials that match their needs. A child works on materials with subgroups of peers who have similar needs. Thus, some youngsters may need phonic skills while others need structural analysis skills. A child does not waste time working on skills he has already mastered.

3. Individualized Speed- Because most of the materials are self-directing and self-correcting, a child moves at his own speed.
4. Individualized Level- Reading selections are varied and individualized so that children read materials closer to their interest and ability levels.

The Role of the Teacher

These guidelines lead to a reduction of teacher-directed activities in which teacher lectures, explains or addresses the entire class, to self-directing, differentiated learning by individuals or by small pupil learning teams. Such guidelines also lead to a new role for the teacher. When pupils are self-directed, the teacher's role changes drastically. This is the most difficult factor in implementing this program, for past experience indicates that the role change is traumatic for most teachers. However, once the teacher survives the initial "breaking in period," the program operates smoothly.

The teacher's role in the program is:

1. Arrange conditions conducive to learning by structuring a "therapeutic classroom."A therapeutic classroom is one that is free of punitive reinforcement for behaviors related to learning. If necessary, punishment may be sparingly used as a response to delinquent social behavior. But it is never used to negatively reinforce incorrect responses by a pupil to a learning stimulus.

Learning involves a behavior change. The human organism tends to resist change, because change is risky business. When we perceive our environment as safe, we are more willing to risk trying a new behavior. If the pupil is presented a stimulus, the response to which may be reinforced negatively by a "red mark against him," a"flunk," or a look of disapproval from his teacher, the risk involves censure. There is danger, In danger, the organism flees or fights. The organism rigidifies--we tighten up. Perception and resulting behavior become less flexible. Behavior variations are reduced. Research in psychology, neurophysiology and stress has well established this phenomenon.

A therapeutic classroom accepts the wrong answer without threat of punishment or disapproval. The wrong answer signals our opportunity to learn. The correct answer symbolizes the termination of opportunity to learn--we have already learned. In a therapeutic classroom, the teacher does

not sit in judgment of his pupils. The judge is personal--I. Grades are deemphasized. Ideally, teacher-given grades are eliminated. Objective, self-administered tests are the basis of self-evaluation. The teacher aids the pupil in interpreting the test and in planning activities for learning, but the teacher preserves the individual's rights to judge himself.

2. Teach pupils how to teach themselves. The largest amount of time in this new role is spent in teaching pupils how to direct themselves: How to select materials appropriate to their needs; how to use the materials correctly; how to evaluate, record, and interpret progress charts. This activity requires the teacher's greatest investment of time and results pay off in areas more basic than reading, writing and arithmetic. The payoff comes in the form of independence, confidence, and general maturity--the self-directed man.
3. Insure success by carefully matching materials to needs. The pupil is not a professional. He is neither an expert in in diagnosis nor a specialist in educational methodology or materials. The teacher must aid him in diagnosing his needs and has the further obligation of determining what goals are most important to the pupil's needs. Furthermore, the teacher must select the self-directing materials to match the pupil's needs.
4. Diagnose, guide, interpret, and evaluate growth. These activities are always done in conjunction with the pupil as service to him, not as a judgment.
5. Supply on-the-spot first aid when materials do not work or when they are unavailable. Most published materials are designed for traditional teacher-directed methods. Over the next decade this will change. Meanwhile, teachers conducting a self-directing learning classroom will find this job most demanding along with the followint task.
6. Develop new materials to solve the problem in the future. This can consume great quantities of preparation time since the numbers of self-directing published materials are minimal. One technique for increasing production of teacher-made self-directing learning materials is to use pupil labor. In a number of programs using the technique described in this experiment, pupils were recruited from "work periods" to produce materials under the teacher's direction. More recently, special corps recruited under Office of Economic Opportunity funds(VISTA, Neighborhood Youth Corps, etc.) have been used to produce materials for various self-directing education programs, In its latest application curriculum specialists will be responsible for generating new materials to meet skill needs in the centers.

7. Personally interact with individuals and small groups.
No other teaching technique, except the one-to-one tutorial method, provides as much teacher-pupil interaction as the self-directing classroom. This technique provides adequately for individual attention. It is the face-to-face interaction that allows the sensitive male teacher to meet the psychological needs of the disadvantaged child who tends to lack satisfying relationships with adult males.
8. Group and continuously regroup small learning teams.
Progress is swift in a self-directing learning program so that children are moving at various paces in various directions. Diagnosis is on-going. Pupil learning teams based on needs are continuously modified at least weekly, and often daily.
9. Introduce lectures, full group activities and enrichment activities
There is nothing inherently bad about teaching thirty children at once. Some activities are effectively presented to a full class a film, trip, discussion, etc. The difference is, that the basic method of a self-directing learning program is individualized instruction and small pupil-team learning units. The full class, teacher directed technique is one minor variation in the teacher's repertoire and is used only when it is the most effective means of learning for the pupils.

Testing:

All children are pre-tested on the Cohen-Cloward Diagnostic Test of Word Attack Skills and the California Reading Test, Junior High School version. These tests yield diagnostic patterns for each child. Alternate versions of the same tests are used to assess progress.

Children form three classes of usual size (20 to 30). They are grouped homogeneously on any variable the school chooses or heterogeneously, depending upon the school's policy.

Schedule:

Each class begins a three class-hour cycle in one of the three learning centers: Word Analysis-Vocabulary Center, Comprehension Center, Work-Study Skills Center. At the end of each class hour, the classes rotate from one center to the next. Thus, each class works in each center daily.

Teaching Assignments:

Each of three teachers specializes in one of the three areas covered by the Centers. Each morning and afternnon they

meet as a team to prepare materials and plan activities.

Learning Centers:

Study Skills Center: Every pupil works on self-teaching self-correcting materials. As the program progresses, more traditional techniques are re-introduced to teach study skills through world history in Abramowitz's World History Study Lessons (Follett Publishing Co.)

Most of the other instruction is self-directed. Every Monday, each class is regrouped into four subgroups according to levels and needs. Each group works together in clusters. Group members receive weekly schedules or materials and time allotments.

Materials that we programmed, are restructured with answer pages. Or, answers are posted on the ANSWER CORNER bulletin board. This allows youngsters to check themselves immediately. Pupils record their own scores on progress charts kept in folders stored in the center of the room.

On speed reading exercises, youngsters compute words per minute, converting to and from words per second. For many seventh and eighth graders, this is the first time they will have mastered long division with decimals.

In the Centers, progress charts are actually bar graphs and histograms, some with two or three variables per graph. This is an effective indirect method of teaching graph reading.

A typical 44-minute class schedule for one child might include 15 minutes on English 2200, 20 minutes on Programed Geography, and 5-10 minutes on Gates Peardon Practice Exercises. Children take pre and post check tests.

The teacher "floats" matching needs to materials, regrouping and administering educational first aid.

Comprehension Center: Like the other Learning Center, the Comprehension Center is entirely self-directing with large group instruction limited to demonstrations of how to use the self-teaching materials. The Comprehension Center stresses three techniques; reading comprehension in reading labs and classroom library, training on a reading machine, and training in listening comprehension.

Listening comprehension exercises are drawn from SRA Reading Lab Teacher Manuals and recorded on Cassette tapes,. Six to eight headsets are plugged into Koss T-4 couplers which are connected to a tape recorder. Pupils sit at a long table converted into small learning booths with masonite partitions.

Word Study Center: Both vocabulary and word attack skills are presented through a variety of materials. Again, most of the activities are self-directing and self-correcting.

The authors have introduced a further systemizatinn component into Skills Centers through the use of a Taxonomy of Methods and Materials to Teach Reading (developed by Tannenbaum and Cohen). Teachers are trained in the use of the taxonomy in order to operationalize the descriptive and prescriptive aspects of the program. Skills, channels of communication, and teaching strategies are codified. The teachers use the taxonomy to prescribe materials for the children. At the same time, the reading team can evaluate the program's effectiveness by noting the extent to which taxonomic prescriptions conform to, or deviate from, what's being done in the centers.

The Skill-Centers approach is not a panacea. It does not purport to do miracles. However, the authors feel that such a methodology represents a total reading system that contains more applications of research findings than the vast majority of reading programs currently in use in our schools today. The program is a "system" because it has delineated a specific set of materials to be used by teachers employing a specific set of strategies. In this form, the system (materials, strategies and personnel to operate the materials and strategies) is deliverable to a classroom as a unit.